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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/662,209	09/14/2000	Bruno Acklin	P00,1314	5877

7590

05/09/2003

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EXAMINER

RODRIGUEZ, ARMANDO

ART UNIT

PAPER NUMBER

2828

DATE MAILED: 05/09/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/662,209

Applicant(s)

ACKLIN ET AL.

Examiner

Armando Rodriguez

Art Unit

2828

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 February 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.



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SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449) Paper No(s) _____ 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

Applicant's arguments with respect to claims 1-20 have been considered but are moot in view of the new ground(s) of rejection. However, applicant has amended several claims to establish a difference between laser diode bar and laser diode array but claim 5 continues to refer to the laser diodes as "laser diode array"; thereby applicant is inconsistent with reference to the laser diodes and continues to imply that the laser diode bar and the laser diode array are the same, which is the interpretation given by the examiner.

Drawings

The corrected or substitute drawings were received on February 19, 2003.
These drawings are being revised by the draftsman.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claims 1 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Regarding claim it is not clear within the claim language how a collimating lens or a focusing lens have the structural capability to change the shape of the laser beam into a circular beam, since it is known that laser beams usually have elliptical shape beams.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1-6,9 are rejected under 35 U.S.C. 102(b) as being anticipated by Plickert et al (PN 5,911,022).

Regarding claims 1, 5, 6, 9, figure 1 illustrates a monolithic silicon substrate (2) with an edge emitting laser diode bar (6) having laser diodes (10a-10d), a plurality of lenses (31a-31d) which correspond to each laser diode and shown in figure 3 a plurality of supply leads (8a-8d) each corresponding to the laser diodes. As disclosed in column 4 lines 7-10, the third substrate can serve to encapsulate the components.

Regarding claim 2, the substrate (2) includes a reflection mirror (3a).

Regarding claim 3, mirror (3a) and (28) reflect the laser beam at a 90-degree angle.

Regarding claim 4, column 5 lines 10 disclose the mirror (28) as formed by metal vapor deposition.

Claims 1,15,16 and 20-22 are rejected under 35 U.S.C. 102(b) as being anticipated by Plickert et al (PN 5,911,022).

Figure 1 illustrates an array of lasers having an optoelectronic chip (12) where the array of lasers are carried, an optical chip (28), which covers the array of lasers with an optical element (30) where the laser beam emits. A wire bond (20) electrically

connects the laser to a terminal pin (26). Pins (26) are connected through macroscopic package (24) where optical chip is mounted.

Figure 5 illustrates an optical chip (80) having optical elements, which may be used in place of optical chip (28), as disclosed in column 8 lines 23-49.

Claim Rejections - 35 USC § 103

Claim 1,7 and 10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Plickert et al (PN 5,911,022) in view of Hwu et al (PN 6,259,713).

Regarding claim 1, figure 1 of Plickert et al illustrates a monolithic silicon substrate (2) with an edge emitting laser diode bar (6) having laser diodes (10a-10d), a plurality of lenses (31a-31d) which correspond to each laser diode and shown in figure 3 a plurality of supply leads (8a-8d) each corresponding to the laser diodes. As disclosed in column 4 lines 7-10, the third substrate can serve to encapsulate the components.

Regarding claims 7,8 and 10,

Plickert et al does not disclose a ceramic carrier having a mirrored surface or a recess within the carrier.

Hwu et al illustrates in figures 11 and 12 a ceramic substrates having a recess within the substrate and having a mirrored surface on the ceramic substrate where a transparent optical element is placed within the recess which includes the mirrored surface to reflect the laser beams of the diode laser array towards a transparent flat surface which covers the entire recess. In column 11 lines 18-25 discloses using ceramic substrates are highly thermally conductive.

Therefore, it would have been obvious to a person having ordinary skill in the art to use a ceramic substrate as taught by Hwu et al because it would improve heat dissipation of the laser beams.

Regarding claims 11-14 and 17-19,

Examiner takes official notice of the use of Peltier elements to provide cooling or temperature control to the substrates of laser system as being notoriously well known in the laser.

Examiner takes official notice of the use of adhesives or solder to bond structural elements in the laser art as being notoriously well known in the art.

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Armando Rodriguez whose telephone number is (703) 308-6218. The examiner can normally be reached on 10-hour day / M-F.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Paul Ip can be reached on (703) 308-3098. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7721 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-4881.


Armando Rodriguez
Examiner
Art Unit 2828


Paul Ip
Supervisor
Art Unit 2828

AR/PI
May 5, 2003